

Work Order ID 143646

March 17, 2016 2:19:26 PM

143646

Page 1

Item ID: D3790-1 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Indexing Block
 Start Date: 4/11/2016 Start Qty: 10.00 ***10*** Cust Item ID:
 Required Date: 4/28/2016 Req'd Qty: 10.00 ***10*** Customer:
 Reference:

Approvals: Process Plan: SLA Date: 20160318 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3790	D								

100 0.00
100
 Bandsaw Memo 0.00
 Jeaspa Bandsaw CUT BLANK 5.90" LONG

7 0 DAS 44 9-89 16/03/22

110 0.00
110
 HAAS 1 Memo 0.00
 HAAS CNC vertical machine #1 MILL AS PER DWG AND FOLIO FA745
 FOLIO REV: B
 DWG REV: B
 DEBURR

7 0 DAS 44 9-89 16/03/23
 160324

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Work Order ID 143646

March 17, 2016 2:19:26 PM

143646

Page 2

Item ID: D3790-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Indexing Block
Start Date: 4/11/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 4/28/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB Memo	0.00 0.00				7	0		DAS 44 9-89 16/03/23
130 *130* QC Quality Control	QC8- Inspect parts - second check Memo	0.00 0.00		B.e 16/03/26		7	0		DAS 08 9-89
140 *140* Packaging Packaging	Identify as per dwg & Stock Location: <u>51054</u> Memo	0.00 0.00				7	0		DAS 8 9-89 MAR 29 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					

Root Cause				FAULT CATEGORY			
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐	
Design ☐		Operator ☐		Bending ☐		Set-up ☐	
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐	
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐	
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐	
Material ☐		Use for Testing ☐		Cuffs ☐		Contamination ☐	
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐	
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐	
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐	
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐	
Past Expiry Date ☐		Manufacturing Process ☐		OTHER : ☐			
Misidentified ☐		Past Due ☐					

Work Order ID 143646

March 17, 2016 2:19:26 PM

143646

Page 3

Item ID: D3790-1 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Indexing Block
Start Date: 4/11/2016 Start Qty: 10.00 ***10*** Cust Item ID:
Required Date: 4/28/2016 Req'd Qty: 10.00 ***10*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	QC21 - Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.00							
Quality Control									

MCS MAR 29 2016

MCS MAR 29 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mis-labeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

March 17, 2016 2:19:30 PM

Page 1

Work Order ID: 143646

143646

Parent Item: D3790-1

D3790-1

Parent Item Name: Indexing Block

Start Date: 4/11/2016

Required Date: 4/28/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP Rev:A New Issue 08-05-16 JLM Verified By:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

MDEL RINB2.000X3.00
0

Purchased

No

f

4.0000

5.473684

DAS

44

9.99

16/03/22.

MDFI RINB2 000X3 000

Delrin Bar 2" x 3"

Location

Loc Qty

Loc Code

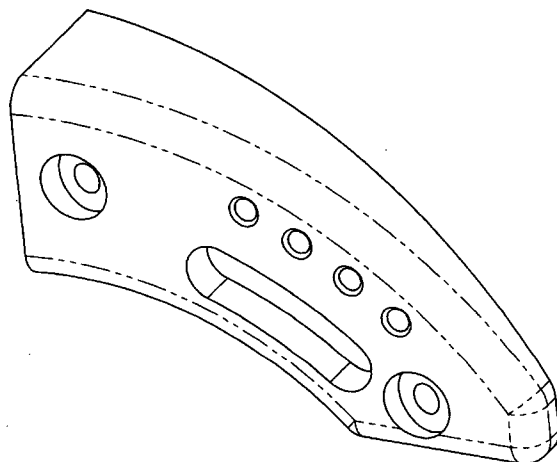
MAT011

4

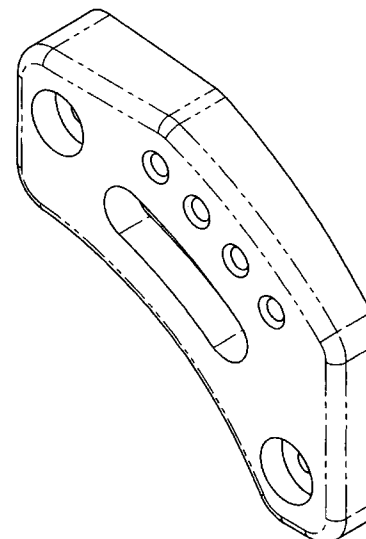
m126214

4

41



D3790-1 INDEXING BLOCK



D3790-3 INDEXING BLOCK (DART DOOR) ^Δ

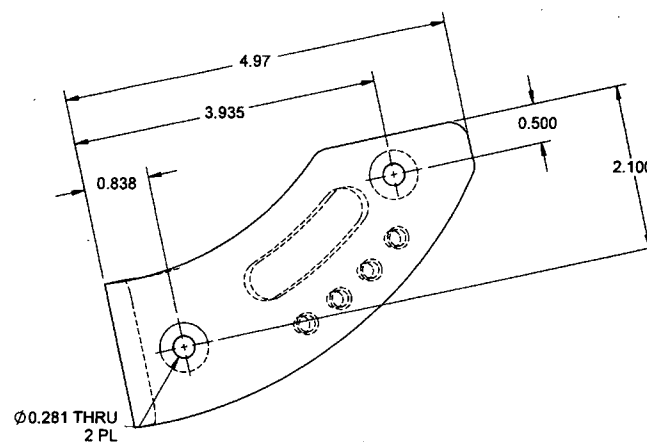
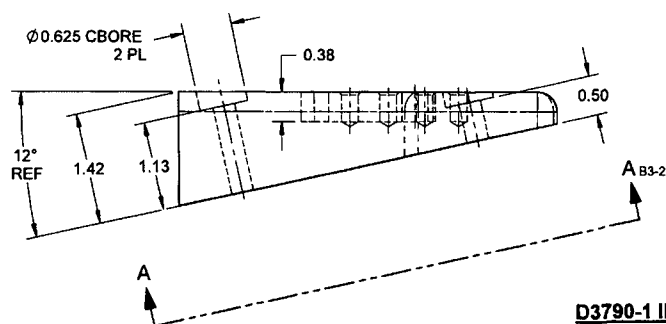
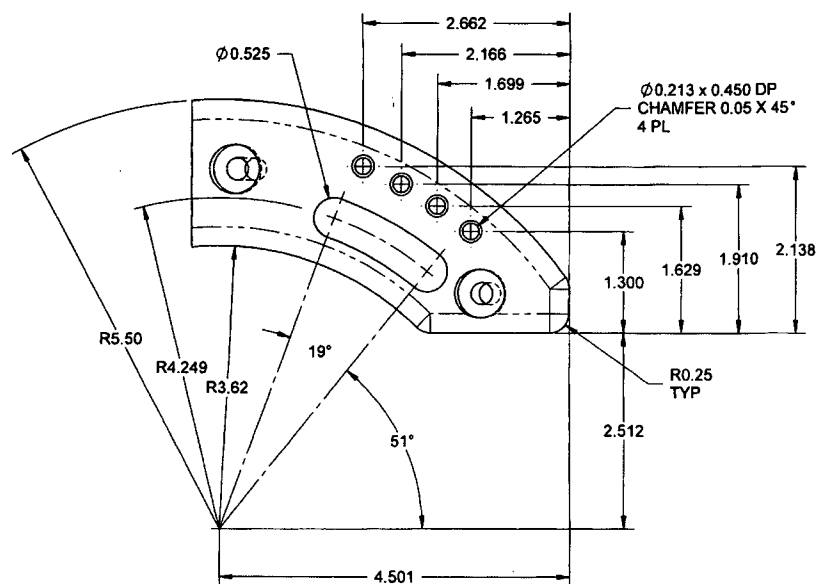
NOTES:

- 1) MATERIAL: BLACK ACETRON GP ACETAL
(REF DART SPEC M-DELRIN-B)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: SCRIBE WITH DART P/N "D3790-X" AND B/N PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT -1: 0.39 lbs
-3: 0.26 lbs

20160318

SA 143646

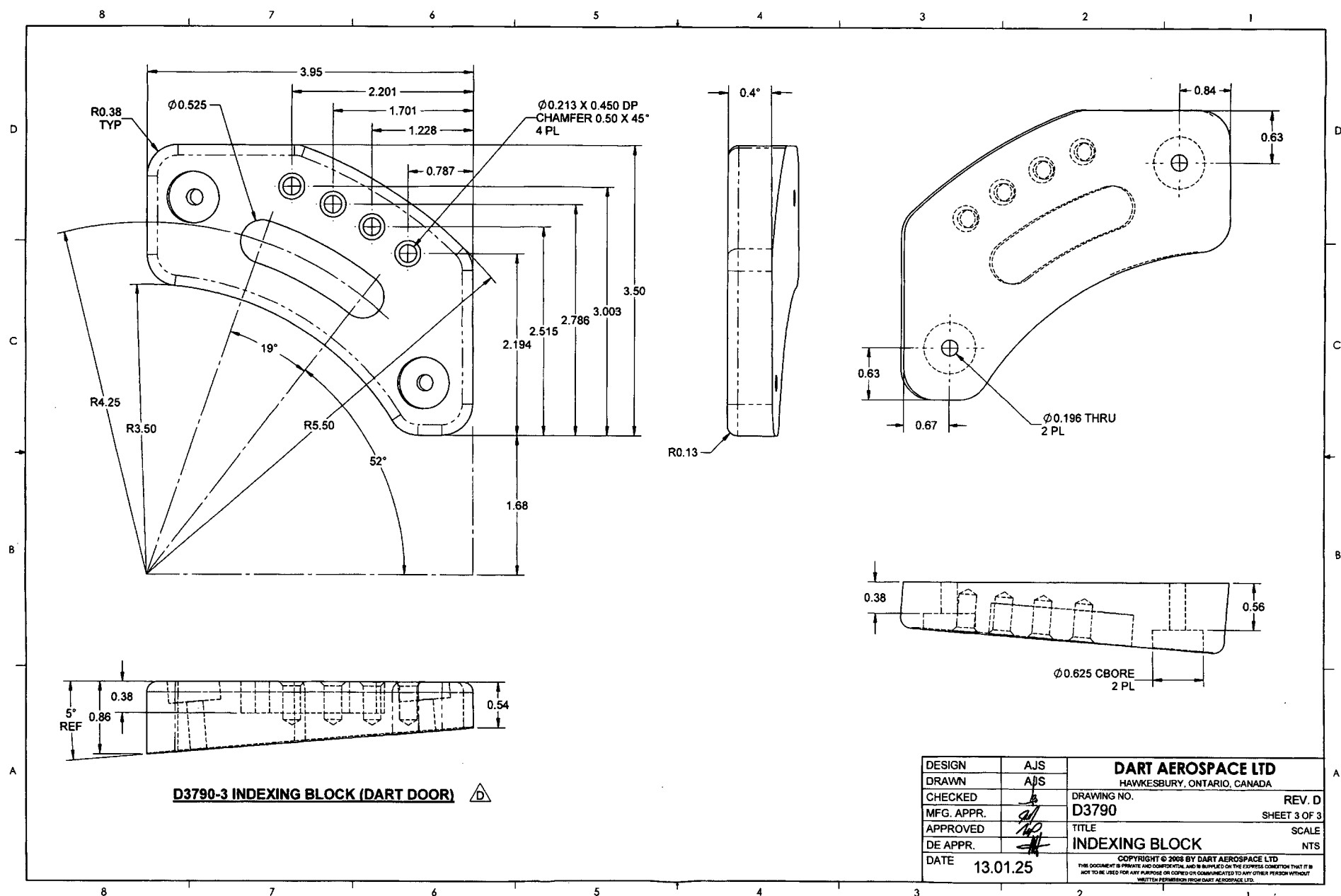
D	-3 COMPLETELY REDESIGNED DUE TO DESIGN ERROR.	AJS	13.01.25
C	ADDED -3 FOR D412-814 DOOR. Ø0.213 WAS Ø0.209 (ZN D5-2). REASON: PAR12-188/CIR12-4	MB	12.12.06
B	UPDATED NOTE 1 (ZN A8-1): Ø0.209 WAS Ø0.250 AND 4 PL WAS 5 PL (ZN D5-2); 19" WAS 25" (ZN C7-2). REASON: REDESIGNED TO ELIMINATE POSSIBLE INTERFERENCE BETWEEN D3705-041 AND D3676-1 AT INSTALLATION	MB	08.08.26
A	NEW ISSUE	MB	08.05.13
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. D
MFG. APPR.	<i>[Signature]</i>	D3790	SHEET 1 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	INDEXING BLOCK	NTS
DATE	13.01.25	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



VIEW A-A A6-2

D3790-1 INDEXING BLOCK

DESIGN	AJS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3790	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		INDEXING BLOCK	NTS
DATE	13.01.25	COPYRIGHT © 2008 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	



DART AEROSPACE LTD		Work Order:	143646
Description: Indexing Block		Part Number:	D3790-1
Inspection Dwg: D3790	Rev: C. D	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.213	+0.005/-0.001	.2125	/		Vern	FK-04
0.450 deep	+/-0.010	.450	/		"	"
0.05 x 45°	+/-0.010 x 0.5°	.05 x 45°	/		"	"
1.265	+/-0.010	1.262	/		H-G	31006-
1.699	+/-0.010	1.697	/		"	"
2.166	+/-0.010	2.165	/		"	"
2.662	+/-0.010	2.660	/		"	"
1.300	+/-0.010	1.301	/		"	"
1.629	+/-0.010	1.630	/		"	"
1.910	+/-0.010	1.911	/		"	"
2.138	+/-0.010	2.139	/		"	"
R0.25	+/-0.030	.25	/		R-G	
R3.62	+/-0.030	3.62	/		"	
R4.249	+/-0.010	4.249	/		"	
R5.50	+/-0.030	5.50	/		"	
19°	0.5°	19°	/		A-G	
51°	0.5°	51°	/		"	
Ø0.525	+0.008/-0.001	.524	/		Vern	PK-04
Ø0.281	+0.006/-0.001	.281	/		"	"
Ø0.625	+0.008/-0.001	.625	/		"	"
4.97	+/-0.030	4.970	/		"	"
3.935	+/-0.010	3.935	/		"	"
8.38	+/-0.010	.838	/		"	"
0.500	+/-0.010	.501	/		"	"
2.100	+/-0.010	2.100	/		"	"
12°	0.5°	12°	/		A-G	
1.42	+/-0.030	1.412	/		Vern	FK-04
1.13	+/-0.030	1.123	/		"	"
0.38	+/-0.030	.377	/		"	"
0.50	+/-0.030	.498	/		"	"

Measured by:	44 9-89	Audited by:	B.A. DAS 9-89	Preliminary Approval:	
Date:	16/03/23	Date:	16/03/26	Date:	

Rev	Date	Change	Revised by	Approved
A	09.05.19	New Issue	KJ	
B	13.02.27	Ø0.213 was Ø0.209	KJ	